

WHAT IS CLAIMED IS:

- 1           1.     An automatic speech recognition system, comprising:  
2                     a memory that stores data related to at least one of a communication  
3     device, transducer, vocal information and acoustic environmental data;  
4                     a controller coupled with the memory that determines the data of the at  
5     least one communications device, transducer, vocal information and acoustic  
6     environmental data, and then compensates at least one speech recognition model to  
7     reflect the data; and  
8                     a speech recognizer that recognizes speech utterances by using the at least  
9     one compensated speech recognition model.
- 10          2.     The automatic speech recognition system according to claim 1, wherein  
11     the transducer data includes a distortion value related to a transducer of a mobile  
12     communications device.
- 13          3.     The automatic speech recognition system according to claim 1, wherein  
14     the acoustic environmental data includes a background noise value that corresponds to an  
15     operating environment of a mobile communications device.
- 16          4.     The automatic speech recognition system according to claim 1, wherein  
17     the vocal information includes a distortion value related to an end user associated with a  
18     mobile communications device.
- 1           5.     The automatic speech recognition system according to claim 1, wherein a  
2     personal computer is used provide the data of the at least one communications device,  
3     transducer, vocal information and acoustic environmental data.
- 1           6.     The automatic speech recognition system according to claim 1, wherein a  
2     personal digital assistant is used to provide the data of the at least one communications  
3     device, transducer, vocal information and acoustic environmental data.
- 1           7.     The automatic speech recognition system according to claim 1, wherein  
2     the data of the at least one communications device, transducer, vocal information and  
3     acoustic environmental data is provided through a satellite communications system.
- 1           8.     The automatic speech recognition system according to claim 1, wherein  
2     the speech recognizer is a network server using a hidden Markov model.

096624-100101

1           9.     The automatic speech recognition system according to claim 1, wherein  
2     the controller is a network server that includes a pronunciation circuit, an environment-  
3     transducer-speaker circuit and a feature space circuit.

1           10.    The automatic speech recognition system according to claim 8, wherein  
2     the network server updates the at least one speech recognition model and a pronunciation  
3     model to reflect a specific type of communications device.

4           11.    The automatic speech recognition system according to claim 1, wherein  
5     the memory further stores personal account information that includes administrative  
6     information relating to an end user, and a probability value that represents a probability  
7     of the end user being in a particular background environment.

8           12.    The automatic speech recognition system according to claim 1, wherein  
9     the communications device can be configured by an end user to select a specific speech  
10    recognition network.

1           13.    A controller used in an automatic speech recognition system, comprising:  
2                a first section that determines data related to at least one of a  
3     communication device, transducer, vocal information and acoustic environmental data;  
4     and

5                a second section that compensates a speech recognition model based the  
6     data related to at least one of the communications device, transducer, vocal information  
7     and acoustic environmental data;

1           14.    The controller according to claim 13, wherein the controller identifies a  
2     mobile device by a radio frequency identification tag.

1           15.    The controller according to claim 13, wherein the acoustic environmental  
2     data is determined using at least one microphone in an end user's environment.

1           16.    The controller according to claim 13, wherein the acoustic environmental  
2     data is determined using a plurality of microphones that are selectively initiated as an end  
3     user walks in between the plurality of microphones.

1           17.    The controller according to claim 13, wherein the transducer data is a  
2     distortion value based on a difference between an actual transducer in the mobile device  
3     and a response characteristic of a transducer used to train the speech recognition model.

1           18.    The controller according to claim 13, wherein the vocal information  
2     represents a variability that exists in vocal tract shapes among speakers of a group.

1           19.    The controller according to claim 13, wherein the controller communicates  
2 with a memory that stores various acoustic environmental models and various features of  
3 a specific type of mobile device.

1           20.    The controller according to claim 19, wherein a third section stores  
2 personal account information for each end user.

1           21.    A method of using an automatic speech recognition system, comprising  
2 the steps of:  
3                receiving speech utterances into the automatic speech recognition system;  
4                determining data related to at least one of a communications device,  
5 transducer, vocal information and acoustic environmental data;  
6                compensating a speech recognition model based on the data related to at  
7 least one of the communications device, transducer, vocal information and acoustic  
8 environmental data; and  
9                recognizing the speech utterances as speech data using the compensated  
10 speech recognition model.

11           22.    The method according to claim 21, wherein the transducer data includes a  
12 distortion value related to a transducer used in a mobile device.

13           23.    The method according to claim 22, wherein the data related to the acoustic  
14 environmental data includes a background noise value that corresponds to an operating  
15 environment of a mobile communications device.

16           24.    The method according to claim 21, wherein the data of the at least one of a  
17 communications device, transducer, vocal information and acoustic environmental data is  
18 received from a cellular telephone.

1           25.    The method according to claim 21, wherein the data of the at least one of a  
2 communications device, transducer, vocal information and acoustic environmental data is  
3 received from a personal digital assistant.

1           26.    The method according to claim 21, wherein the data of the at least one of a  
2 communications device, transducer, vocal information and acoustic environmental data is  
3 received via a satellite communications system.

1           27.    The method according to claim 21, wherein the speech recognition model  
2 is a hidden Markov model.

